

**Climatological Data for August, 1909.**  
**DISTRICT No. 8, TEXAS AND RIO GRANDE VALLEY.**

BERNARD BUNNEMEYER, District Editor.

The month was characterized by uniformly warm weather throughout the district, by frequent and heavy showers in both Colorado and New Mexico, and by generally deficient precipitation in Texas. There were, however, heavy rains over limited areas in the last-named State. The sunshine was abundant in Texas, but considerably below the normal in Colorado and New Mexico, both of which had an unusually large number of cloudy and rainy days. In portions of New Mexico the number of rainy days exceeded 20 and the greatest reported was 27 at Hopewell in the upper Rio Grande watershed. The excess of precipitation in New Mexico, coupled with a high average temperature, explains in a large measure the remarkably rapid growth of plant life after a rather dry, backward spring and early summer in that territory.

While the average volume of water carried by the Rio Grande and Rio Pecos was much larger than during the preceding month, there was a general falling off in the other rivers of the district, except the Brazos, whose average depth was about 1 foot greater than in July. The Trinity, Neches, and Sabine were exceptionally low, and the lumber industry in east Texas suffered much from the shortage of water. A number of saw mills had to suspend operations.

The mean temperatures in the various localities of the district ranged from  $56.4^{\circ}$  at Hopewell, N. Mex., to  $89.8^{\circ}$  at Fort McIntosh, Tex. These stations are both located in the Rio Grande drainage area. In that of the Rio Pecos the extremes of mean temperature ranged from  $62.8^{\circ}$  at Windsors, N. Mex., to  $82.1^{\circ}$  at Barstow, Tex. In all other watersheds of the district the monthly mean temperature exceeded  $80^{\circ}$ , except in the extreme upper Brazos Valley where it was slightly less. There was a general excess of temperature in the district, although in scattered localities in the Rio Grande and Rio Pecos drainage areas there was a slight deficiency. The excess was greatest in the eastern portion of the district, where the mean temperature averaged from  $2^{\circ}$  to  $4^{\circ}$  above the normal. There was a well defined warm period from about the 15th to the 22d, during which temperatures of  $100^{\circ}$  and over occurred in the southeastern portion of New Mexico and throughout Texas, except the coast and extreme west. The 18th was the warmest day of the month. On this day the temperature reached  $102^{\circ}$  at Carlsbad, N. Mex., and  $115^{\circ}$  at a number of stations in the upper Trinity and upper Sabine valleys.

This high temperature has not been exceeded in any August of the past eighteen years. Toward the termination of this heated period local storms occurred in various parts of Texas. The lowest temperature was  $40^{\circ}$  and occurred at Windsors, N. Mex., on the 10th, and at San Luis, Colo., on the 28th.

The precipitation over the Rio Grande watershed exceeded the normal considerably in its upper and lower portions, but was deficient over a large stretch extending from about Rincon, N. Mex., southward nearly to Eagle Pass, Tex. Over the headwaters of the Rio Grande and over its entire watershed southward nearly to El Paso, Tex., the monthly rainfall averaged very nearly 3 inches. The greatest amount was 10.03 inches at San Rafael, and the least 0.12 inch at Orogrande. From this latter place to Maverick County, Tex., there was a decided deficiency, the average amount being much less than 1 inch; but farther down the average increased rapidly and amounted to nearly 5 inches. While the excess in the upper Rio Grande watershed was the result of thundershowers that occurred at frequent intervals throughout the month, that over the lower drainage area occurred late in the month and was caused by a tropical disturbance which moved westward over the Gulf into Mexico, reaching the upper coast of that

country on the 27th. This storm caused high tides on the coast of Texas and considerable damage by wind and water in the lower coast country. At Corpus Christi a wind velocity of 56 miles per hour was recorded on that day. The attending precipitation was exceptionally heavy, especially in northern Mexico, where it inundated the country, causing much loss of life and property, and much suffering. The lower Rio Grande rose higher than known for years and flooded the lowlands for miles, resulting in an interruption of traffic and communication and doing other damage. At the close of the month the river had begun to recede at Samfordyce, but continued at high-water mark below that place.

The rainfall over the Rio Pecos drainage area was decidedly greater than the normal southward to the Texas border line. The average over this area was 3.36 inches. The greatest amount was 10.11 inches at Harveys Upper Ranch, and the least 1.59 inches at Los Tanos. Below the Texas border line there was a marked deficiency, the average amount of precipitation being less than one-half inch.

The northern limit of the rain area attending the tropical disturbance of the 27th extended over the watershed of the Nueces, and there was therefore an excess of precipitation over the greater portion of that drainage area. The excess, however, was much less pronounced than it was over the lower Rio Grande, but it was sufficient to cause some of the smaller tributaries to overflow. The average amount approximated 2.50 inches, the greatest being 4.26 inches at Sabinal, and the least 0.91 inch at Pearsall. From the Nueces eastward to the Brazos, covering the entire drainage areas of the San Antonio, Guadalupe, Lavaca, and Colorado, there was a general deficiency in precipitation, although the deficiency was less over the Guadalupe watershed than over those of the other three rivers. A few limited areas, however, showed a moderate excess. The average amounts of precipitation in these watersheds were as follows: San Antonio, 1.44 inches; Guadalupe, 1.68 inches; Colorado, 1.22 inches; and Lavaca, 0.84 inch. The extremes were greatest in the Colorado watershed where they ranged from 0.09 inch at Llano to 2.80 inches at Austin. Conditions over the Brazos drainage area were much more favorable than over that of the Colorado. It had an average rainfall of 2.35 inches which is nearly twice that of the latter. There was, however, a decided deficiency over both the upper and lower portions, but this deficiency was very nearly offset by a large excess over the middle portion. The greatest amount was 5.47 inches at Dublin, and the least, 0.62 inch, at Abilene. The precipitation over the Trinity drainage area averaged 0.28 inch less than over that of the Brazos. It was excessively heavy over its headwaters, but there was a general deficiency south of Waxahachie. The greatest amount was 6.35 inches at Bowie, and the least, 0.32 inch, at Crockett. There was much less variation in the rainfall over the Sabine drainage area, where the amounts ranged from 0.90 inch at Greenville to 2.34 inches at Logansport, and averaged 1.81 inches. The average over the Neches watershed was 2.60 inches, but this includes excessively heavy local rains, totaling 8.09 inches, at Beaumont near the mouth of the river. Neglecting the Beaumont rains, the average would be reduced to that of the Sabine drainage area. The river stages of the Sabine, and of the Neches above Beaumont, were the lowest recorded for August in the past seven years. Most of the rains in the Texas watersheds occurred during the fore part of the month, except in those of the Nueces and lower Rio Grande, which had the heaviest rains during the third decade.

TABLE 1.—*Climatological data for August, 1909. District No. 8, Texas and Rio Grande Valley.*

| Stations.                 | Counties.   | Elevation, feet. | Length of record, yrs. | Temperature, in degrees Fahrenheit. |                            |                 |       |                 | Precipitation, in inches. |                       |        |                            |                       | Number of rainy days, 0.1 inch or more. | Number of clear days. | Number of partly cloudy days. | Number of cloudy days. | Prevailing wind direction. | Observers.                |                           |
|---------------------------|-------------|------------------|------------------------|-------------------------------------|----------------------------|-----------------|-------|-----------------|---------------------------|-----------------------|--------|----------------------------|-----------------------|---|-----------------------|-------------------------------|------------------------|----------------------------|---------------------------|---------------------------|
|                           |             |                  |                        | Mean.                               | Departure from the normal. | Highest.        | Date. | Lowest.         | Date.                     | Greatest daily range. | Total. | Departure from the normal. | Greatest in 24 hours. | Total snowfall unmelted.                |                       |                               |                        |                            |                           |                           |
| <i>Colorado.</i>          |             |                  |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            |                           |                           |
| Amethyst (near).          | Mineral.    | 8,730            | 1                      | 62.3                                |                            | 84              | 8     | 42              | 28                        | 38                    | 4.07   |                            | 1.37                  | 0.0                                     | 18                    | 2                             | 29                     | 0                          | sw.                       | Don C. La Font.           |
| Blanca.                   | Costilla.   | 8,403            |                        | 62.3                                |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | L. C. Audrain.            |                           |
| Cumbres.                  | Conejos.    | 10,015           | 3                      |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Venita A. Good.           |                           |
| Garnett.                  | Costilla.   | 7,576            | 16                     | 63.2                                | + 2.5                      | 94              | 22    | 42              | 5                         | 39                    | 1.47   | + 0.17                     | 0.80                  | 0.0                                     | 5                     | 4                             | 21                     | 6                          | se.                       | Chas. Spelser.            |
| Hermit.                   | Hinsdale.   | 9,843            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | C. C. Mason.              |                           |
| La Veta Pass.             | Costilla.   | 9,000            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Norvin R. Lively.         |                           |
| Manassa.                  | Conejos.    | 7,700            | 3                      | 62.5 <sup>b</sup>                   |                            | 83              | 17    | 41              | 19                        | 36                    | 1.15   |                            | 0.90                  | 0.0                                     | 11                    | 10                            | 18                     | 5                          | w.                        | J. B. Chapman.            |
| Platoro.                  | Costilla.   | 9,675            | 2                      |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Walter R. Hook.           |                           |
| Saguache.                 | Costilla.   | 7,740            | 17                     |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Eugene Williams.          |                           |
| San Luis.                 | Costilla.   | 7,794            | 18                     | 62.0                                | - 0.1                      | 85              | 22    | 40              | 28                        | 37                    | 3.55   | + 2.14                     | 0.63                  | 0.0                                     | 16                    | 5                             | 25                     | 1                          | sw.                       | P. B. Albright.           |
| Wagon Wheel Gap.          | Mineral.    | 8,434            | 10                     |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Ellwood Bergay.           |                           |
| <i>New Mexico.</i>        |             |                  |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            |                           |                           |
| Agricultural College.     | Dona Ana.   | 3,863            | 43                     | 79.0                                |                            | 96              | 1†    | 60              | 7†                        | 36                    | 1.11   | - 0.60                     | 0.78                  | 0.0                                     | 4                     | 8                             | 23                     | 0                          | w.                        | N. M. Agric. College.     |
| Alamogordo (near).        | Otero.      | 4,338            | 9                      | 77.3                                |                            | 98              | 5†    | 56              | 11                        | 39                    | 1.88   |                            | 0.85                  | 0.0                                     | 8                     | 15                            | 11                     | 5                          | sw.                       | Jas. C. Dunn.             |
| Alamogordo.               | do.         | 4,320            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Albuquerque.              | Bernalillo. | 5,200            | 34                     |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | University of N. M.       |                           |
| Anchett.                  | Taos.       | 9,018            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Geo. W. Oates.            |                           |
| Ancho.                    | Lincoln.    | 6,112            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Aspen Grove Ranch.        | Rio Arriba. | 9,000            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Junius D. Maupin.         |                           |
| Bateman Ranch.            | do.         | 8,900            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | John W. Bateman.          |                           |
| Bluewater.                | Valencia.   | 6,732            | 8                      | 66.6                                |                            | 88              | 22    | 30              | 25†                       | 37                    | 4.09   |                            | 0.63                  | 0.0                                     | 14                    | 4                             | 21                     | 6                          | w.                        | Bluewater Develop'mt Co   |
| Bluewater Reservoir.      | Chaves.     | 9,000            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Do.                       |                           |
| Boaz.                     | Lincoln.    | 4,154            |                        | 75.0                                |                            | 98              | 17    | 57              | 25                        | 37                    | 1.60   |                            | 0.61                  | 0.0                                     | 5                     | 11                            | 15                     | 5                          | s.                        | D. C. Savage.             |
| Capitan.                  | Eddy.       | 6,348            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Carlsbad.                 | Lincoln.    | 3,120            | 15                     | 79.0                                | - 0.8                      | 102             | 18    | 58              | 25                        | 38                    | 1.87   | - 0.60                     | 0.83                  | 2.0 <sup>c</sup>                        | 6                     | 8                             | 19                     | 4                          | se.                       | A. H. Harvey.             |
| Carizoso (1).             | Lincoln.    | 5,429            | 2                      | 72.4                                |                            | 92              | 5†    | 52              | 16†                       | 37                    | 2.87   |                            | 0.75                  | 0.0                                     | 10                    | 2                             | 24                     | 5                          | se.                       | Agent E. P. & S. W. R. R. |
| Carizoso (3).             | do.         | 5,438            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Frank C. Johnson.         |                           |
| Chama.                    | Rio Arriba. | 7,851            | 8                      | 64.1                                |                            | 87              | 17    | 46              | 9†                        | 36                    | 3.22   | + 0.50                     | 0.46                  | 0.0                                     | 14                    | 2                             | 24                     | 5                          | sw.                       | M. P. Coakly.             |
| Cloudcroft (1).           | Otero.      | 8,650            | 7                      |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Cloudcroft (2).           | do.         | 8,650            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Do.                       |                           |
| Corona.                   | Lincoln.    | 6,666            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | e.                        |                           |
| Coyote.                   | do.         | 5,800            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Do.                       |                           |
| Cundiyo.                  | Santa Fe.   | 6,889            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Teofilo Vilij.            |                           |
| Demonstration Farm.       | San Miguel. | 6,800            | 1                      |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Erb and Westerman.        |                           |
| Duran (1).                | Torrance.   | 6,272            | 1                      | 70.1                                |                            | 90              | 5†    | 51              | 25                        | 34                    | 2.81   |                            | 1.26                  | 0.0                                     | 6                     | 9                             | 18                     | 4                          | w.                        | W. H. Birkhead.           |
| Duran (2).                | Taos.       | 6,272            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Edison Mine.              | do.         | 10,600           |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Frank L. Paxton.          |                           |
| Elk (near).               | Chaves.     | 10               | 67.6 <sup>c</sup>      | - 2.3                               | 85 <sup>c</sup>            | 6†              | 45†   | 25              | 32 <sup>c</sup>           | 4.58                  | + 1.31 | 1.54                       | 0.0                   | 8                                       | 10                    | 19                            | 2                      | sw.                        | Boyd Williams.            |                           |
| Escondido.                | Otero.      | 4,014            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Espanola.                 | Rio Arriba. | 5,580            | 13                     |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Mrs. E. F. McBride.       |                           |
| Estancia.                 | do.         | 6,140            | 4                      | 72.9                                |                            | 98              | 1†    | 50              | 41                        | 46                    | 1.80   |                            | 0.35                  | 0.0                                     | 11                    | 18                            | 13                     | 0                          | c.                        | Agent N. M. Cent. R. R.   |
| Fort Stanton.             | Lincoln.    | 6,231            | 30                     | 67.8                                | + 0.7                      | 90              | 6     | 47              | 25                        | 37                    | 3.54   | + 0.07                     | 2.09                  | 0.0                                     | 11                    | 13                            | 11                     | 7                          | se.                       | U. S. Sanitarium.         |
| Fort Sumner.              | Guadalupe.  | 3,960            | 7                      | 77.2                                |                            | 101             | 17    | 55              | 24                        | 39                    | 1.70   |                            | 0.59                  | 0.0                                     | 9                     | 28                            | 3                      | 1                          | sw.                       | F. A. Marzonares.         |
| Gallinas.                 | Lincoln.    | 6,635            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Gallinas Planting Stat'n. | San Miguel. | 7,500            | 3                      | 63.8                                |                            | 89              | 1     | 48              | 11                        | 39                    | 6.98   |                            | 1.13                  | 0.0                                     | 23                    | 1                             | 26                     | 4                          | nw.                       | U. S. Forest Service.     |
| Harvey's Upper Ranch.     | Sierra.     | 9,400            | 10                     | 75.0                                | + 0.4                      | 94              | 1     | 59              | 17†                       | 34                    | 2.39   | + 0.10                     | 0.72                  | 0.0                                     | 10                    | 19                            | 12                     | 0                          | w.                        | Simon B. Warner.          |
| Hillsboro.                | Taos.       | 5,224            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Simon B. Warner.          |                           |
| Hodges.                   | Chaves.     | 8,434            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Ralph W. Johnson.         |                           |
| Honda Reservoir.          | do.         | 3,904            | 1                      | 76.6                                |                            | 98              | 16†   | 58              | 24†                       | 30                    | 2.86   |                            | 1.04                  | 0.0                                     | 7                     | 19                            | 10                     | 2                          | se.                       | U. S. Reclamation Serv.   |
| Hope.                     | Eddy.       | 3                |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | N. L. Johnson.            |                           |
| Hopewell.                 | Rio Arriba. | 9,500            |                        | 56.4 <sup>c</sup>                   |                            | 76 <sup>c</sup> | 16    | 41 <sup>c</sup> | 9†                        | 32 <sup>c</sup>       | 6.82   |                            | 2.05                  | 0.0                                     | 27                    | 0                             | 7                      | 24                         | sw.                       | John L. Blanton.          |
| Leguna.                   | Valencia.   | 5,840            | 5                      | 71.6                                |                            | 92              | 17    | 52              | 13                        | 38                    | 3.25   |                            | 1.25                  | 0.0                                     | 5                     | 5                             | 24                     | 3                          | w.                        | Gus Weiss.                |
| Legunita.                 | Guadalupe.  | 4,500            | 5                      | 75.0 <sup>c</sup>                   |                            | 96 <sup>c</sup> | 6     | 52 <sup>c</sup> | 9                         | 34 <sup>c</sup>       | 2.25   |                            | 1.38                  | 0.0                                     | 7                     | 21                            | 7                      | 2                          | s.                        | P. A. Turnbull.           |
| La Huerta.                | Eddy.       | 3,111            | 1                      |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Do.                       |                           |
| Lake Valley.              | Sierra.     | 5,415            | 5                      |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Barclay Sutherland.       |                           |
| Las Vegas.                | San Miguel. | 6,384            | 23                     | 68.6                                | + 0.8                      | 92              | 22†   | 50              | 5†                        | 42                    | 5.90   | + 2.63                     | 1.57                  | 0.0                                     | 14                    | 10                            | 19                     | 2                          | w.                        | N. L. Johnson.            |
| Los Lunas (near).         | Valencia.   | 4,900            | 18                     | 75.0                                | + 1.5                      | 96              | 1     | 56              | 28†                       | 34                    | 0.44   | - 0.71                     | 0.22                  | 0.0                                     | 4                     | 7                             | 24                     | 0                          | sw.                       | Gus Weiss.                |
| Los Tanos.                | Guadalupe.  | 4,919            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | P. A. Turnbull.           |                           |
| Magdalena.                | Socorro.    | 6,557            | 4                      | 68.0                                |                            | 88              | 17    | 51              | 2                         | 33                    | 3.57   |                            | 0.59                  | 0.0                                     | 9                     | 7                             | 22                     | 2                          | s.                        | F. A. Marzonares.         |
| Mineral Hill.             | do.         | 7,050            | 5                      |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Monument.                 | Eddy.       | 3,500            | 4                      |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Mountainair.              | Torrance.   | 6,547            | 7                      | 69.2                                |                            | 93              | 6     | 51              | 31                        | 37                    | 2.53   |                            | 0.38                  | 0.0                                     | 14                    | 12                            | 18                     | 1                          | sw.                       | James M. Cook.            |
| Newman.                   | Otero.      | 3,959            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | John W. Corbett.          |                           |
| Noria.                    | Dona Ana.   | 4,414            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Orogrande.                | Otero.      | 4,171            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Do.                       |                           |
| Oscuro (near).            | Lincoln.    | 5,016            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Eugene F. Jones.          |                           |
| Oscuro (2).               | do.         | 5,016            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Otis.                     | Eddy.       | 3,100            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | A. M. Hove.               |                           |
| Otto.                     | Santa Fe.   | 6,200            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Otto Goetz.               |                           |
| Pastura.                  | Guadalupe.  | 5,285            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Red River.                | Taos.       | 8,650            |                        | 59.8 <sup>d</sup>                   |                            | 88 <sup>d</sup> | 8     | 38 <sup>d</sup> | 31                        | 42 <sup>d</sup>       | 4.87   |                            | 0.75                  | 0.0                                     | 13                    | 8                             | 19                     | 4                          | w.                        | Mrs. L. R. Penn.          |
| Rincon.                   | Dona Ana.   | 4,030            | 11                     | 78.0                                | + 0.4                      | 97              | 7     | 57              | 31                        | 35                    | 1.75   | - 0.73                     | 0.50                  | 0.0                                     | 3                     | 7                             | 20                     | 4                          | se.                       | Chas. H. Ratt.            |
| Rio Grande Dam.           | Sierra.     | 4,265            | 11                     | 79.2                                | + 3.4                      | 98              | 6     | 59              | 31                        | 35                    | 1.50   | - 1.23                     | 0.41                  | 0.0                                     | 10                    | 16                            | 9                      | 6                          | sw.                       | U. S. Reclamation Serv.   |
| Rosedale.                 | Socorro.    | 6,910            | 5                      | 67.2                                |                            | 85              | 17    | 51              | 9                         | 28                    | 4.32   |                            | 0.90                  | 0.0                                     | 22                    | 8                             | 15                     | 5                          | w.                        | W. H. Martin.             |
| Roswell.                  | Chaves.     | 3,578            | 12                     | 78.2                                | - 0.4                      | 97              | 17    | 57              | 25                        | 34                    | 2.01   | + 0.55                     | 1.30                  | 0.0                                     | 5                     | 15                            | 12                     | 4                          | s.                        | U. S. Weather Bureau.     |
| San Marcial.              | Socorro.    | 4,439            | 14                     | 76.8                                | - 0.2                      | 97              | 17    | 58              | 25                        | 34                    | 1.83   | - 0.21                     | 0.50                  | 0.0                                     | 7                     | 7                             | 20                     | 4                          | se.                       | Agent A. T. & S. F. R. R. |
| San Rafael.               | Valencia.   | 6,509            | 6                      | 69.8                                |                            | 88              | 1†    | 53              | 6†                        | 33                    | 0.93   | + 2.75                     | 1.52                  | 0.0                                     | 15                    | 7                             | 11                     | 13                         | sw.                       | Dr. C. M. Grover.         |
| Santa Fe.                 | Santa Fe.   | 7,013            | 37                     | 66.8                                | - 0.2                      | 85              | 17    | 53              | 1                         | 26                    | 2.02   | - 0.34                     | 0.40                  | 0.0                                     | 18                    | 4                             | 23                     | 4                          | ne.                       | Section Center.           |
| Santa Rosa (1).           | Guadalupe.  | 4,624            | 10                     | 77.6                                |                            | 99              | 5†    | 58              | 30                        | 37                    | 2.48   |                            | 0.69                  | 0.0                                     | 10                    | 4                             | 25                     | 2                          | w.                        | John L. Chapman.          |
| Santa Rosa (2).           | do.         | 4,624            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Socorro.                  | Taos.       | 4,600            | 19                     | 76.1 <sup>a</sup>                   | + 4.2                      | 101             | 7     | 55 <sup>a</sup> | 8                         | 40 <sup>a</sup>       | 1.31   | - 0.09                     | 0.45                  | 0.0                                     | 10                    | 18                            | 7                      | 6                          | se.                       | J. J. Leeson.             |
| Strauss.                  | do.         | 6,317            | 67.7                   |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | L. J. Cartwright.         |                           |
| Taos.                     | Dona Ana.   | 4,080            | 11                     |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Alexander Gudorf.         |                           |
| Taos Canyon.              | Lincoln.    | 8,959            | 12                     |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Leocadio Martinez, jr.    |                           |
| Tecolote.                 | Otero.      | 6,539            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Agent E. P. & S. W. R. R. |                           |
| Torrance.                 | Taos.       | 4,539            |                        |                                     |                            |                 |       |                 |                           |                       |        |                            |                       |   |                       |                               |                        |                            | Do.                       |                           |
| Tres Piedras.             | Taos.       | 8,076            | 5                      | 64.1                                |                            | 87              | 17    | 44              | 9                         | 40                    | 1.85   |                            | 0.40                  | 0.0                                     | 9                     | 12                            | 19                     | 0                          | sw.                       | Edwin B. Seward.          |
| Truchos.                  | Rio Arriba. | 7,935            | 63.1                   |                                     |                            | 80              | 13†   | 44              | 31                        |                       |        |                            |                       |   |                       |                               |                        |                            |                           |                           |

TABLE 1.—*Climatological data for August, 1909. District No. 8—Continued.*

| Stations.       | Counties.   | Elevation, feet. | Length of record, yrs. | Temperature, in degrees Fahrenheit. |                            |                  |          | Precipitation, in inches. |       |                       |        | Sky.                       | Prevailing wind direction. | Observers.               |   |    |    |    |                 |                         |
|-----------------|-------------|------------------|------------------------|-------------------------------------|----------------------------|------------------|----------|---------------------------|-------|-----------------------|--------|----------------------------|----------------------------|--------------------------|---|----|----|----|-----------------|-------------------------|
|                 |             |                  |                        | Mean.                               | Departure from the normal. |                  | Highest. | Lowest.                   | Date. | Greatest daily range. | Total. | Departure from the normal. | Greatest in 24 hours.      | Total snowfall unrolled. | Number of rainy days, 0.1 inch or more. |    |    |    |                 |                         |
|                 |             |                  |                        |                                     | Highest.                   | Lowest.          |          |                           |       |                       |        |                            |                            |                          |   |    |    |    |                 |                         |
| Texas—Cont'd.   |             |                  |                        |                                     |                            |                  |          |                           |       |                       |        |                            |                            |                          |   |    |    |    |                 |                         |
| Alvin.          | Brazoria.   | 49               | 10                     |                                     |                            |                  |          |                           |       |                       | 2.14   | -2.06                      | 0.36                       | 0.0                      | 5                                       | 16 | 8  | 7  | s.              | F. A. Smith.            |
| Anahuac.        | Chambers.   |                  |                        |                                     |                            |                  |          |                           |       |                       | 1.79   | +0.44                      | 1.64                       | 0.0                      | 4                                       | 13 | 16 | 2  | s.              | B. H. Collins.          |
| Austin.         | Travis.     | 650              | 23                     |                                     |                            |                  |          |                           |       |                       | 2.80   | +0.44                      | 2.33                       | 0.0                      | 4                                       | 17 | 11 | 3  | s.              | E. Deussen.             |
| Ballinger.      | Runnels.    | 1,637            | 14                     | 82.8                                | + 0.6                      | 108              | 18       | 62                        | 23    | 43                    | 2.33   | +0.03                      | 1.80                       | 0.0                      | 4                                       | 27 | 4  | 0  | se.             | E. M. Eubank.           |
| Barstow.        | Ward.       | 2,573            | 2                      | 82.1                                |                            | 102              | 19       | 60                        | 24    | 35                    | 0.10   |                            | 0.10                       | 0.0                      | 1                                       | 18 | 3  | 3  | s.              | W. H. Denis.            |
| Beaumont.       | Jefferson.  | 29               | 12                     | 84.0                                | + 0.6                      | 102              | 18†      | 70                        | 1†    | 26                    | 8.08   | +3.91                      | 3.88                       | 0.0                      | 9                                       | 13 | 0  | 18 | se.             | Jno. Bender.            |
| Beeville.       | Bee.        | 225              | 13                     | 84.0                                | - 1.2                      | 108              | 19       | 68                        | 18    | 37                    | 4.35   | +2.43                      | 1.45                       | 0.0                      | 7                                       | 10 | 11 | 10 | se.             | L. E. Dickey.           |
| Big Springs.    | Howard.     | 2,396            | 7                      | 84.2 <sup>b</sup>                   |                            | 107 <sup>b</sup> | 18       | 65 <sup>b</sup>           | 23    | 40 <sup>b</sup>       | 1.23   | -0.47                      | 0.56                       | 0.0                      | 0                                       | 6  | 23 | 2  | s.              | B. Reagan.              |
| Blanco.         | Blanco.     | 1,350            | 13                     | 82.9 <sup>b</sup>                   | - 1.6                      | 107 <sup>b</sup> | 18       | 63                        | 23    | 33 <sup>b</sup>       | 1.24   | -0.48                      | 0.49                       | 0.0                      | 4                                       | 24 | 0  | 7  | s.              | R. C. Crist.            |
| Boerne.         | Kendall.    | 1,412            | 17                     | 80.3                                | - 1.3                      | 109              | 19       | 61                        | 12†   | 39                    | 0.88   | -1.18                      | 0.48                       | 0.0                      | 4                                       | 16 | 11 | 4  | s.              | F. W. Schweppé.         |
| Booth.          | Fort Bend.  | 81               | 8                      |                                     |                            |                  |          |                           |       |                       | 1.56   | -1.88                      | 0.37                       | 0.0                      | 6                                       | 25 | 1  | 5  | e.              | T. R. Booth.            |
| Boquillas.      | Brewster.   |                  |                        |                                     |                            |                  |          |                           |       |                       |        |                            |                            |                          |   |    |    |    |                 | M. A. Ernst.            |
| Bowie.          | Montague.   | 1,113            | 9                      | 85.2                                | + 2.7                      | 108              | 5        | 68                        | 14†   | 34                    | 0.35   | +4.76                      | 4.96                       | 0.0                      | 8                                       | 10 | 20 | 1  | ne.             | Craig Anderson.         |
| Brazoria.       | Brazoria.   | 25               | 20                     | 83.7                                | + 2.9                      | 100              | 18†      | 69                        | 24    | 26                    | 2.96   | -2.10                      | 0.99                       | 0.0                      | 8                                       | 26 | 3  | 2  | s.              | Mrs. M. A. Stephens.    |
| Brazos.         | Palo Pinto. | 801              |                        |                                     |                            |                  |          |                           |       |                       |        |                            |                            |                          |   |    |    |    |                 | Rob. E. Boyett.         |
| Brenham.        | Washington. | 350              | 20                     | 85.8                                | + 1.9                      | 111              | 19       | 73                        | 21    | 33                    | 0.64   | +0.38                      | 2.26                       | 0.0                      | 4                                       | 16 | 9  | 6  | ne.             | Mrs. B. F. Sloan.       |
| Bridgeport.     | Wise.       | 754              |                        |                                     |                            |                  |          |                           |       |                       |        |                            |                            |                          |   |    |    |    |                 | Thos. C. West.          |
| Brighton.       | Nueces.     | 12               | 13                     | 82.8                                | - 0.3                      | 96               | 21       | 73                        | 16†   | 21                    | 2.88   | +1.23                      | 1.08                       | 0.0                      | 9                                       | 16 | 13 | 1  | e.              | G. H. Ritter.           |
| Brownsville.    | Cameron.    | 38               | 20                     | 83.1                                | - 1.1                      | 98               | 18       | 71                        | 25    | 25                    | 5.60   | +2.82                      | 2.78                       | 0.0                      | 9                                       | 12 | 3  | 3  | s.              | U. S. Weather Bureau.   |
| Brownwood.      | Brown.      | 1,342            | 19                     | 84.2                                | + 1.1                      | 104              | 6        | 63                        | 23    | 38                    | 1.00   | -1.34                      | 0.65                       | 0.0                      | 5                                       | 12 | 16 | 1  | s.              | Mrs. Pearl Smith.       |
| Cameron.        | Milam.      | 1                | 87.8                   |                                     |                            | 113              | 17       | 71                        | 23    | 36                    | 1.67   |                            | 1.35                       | 0.0                      | 5                                       | 18 | 12 | 1  | s.              | J. E. Watts.            |
| Carmona.        | Polk.       | 3,100            | 5                      | 84.8                                |                            | 108              | 18†      | 64                        | 22†   | 36                    | 1.59   |                            | 0.69                       | 0.0                      | 4                                       | 19 | 12 | 0  | e.              | G. S. Warner.           |
| Claytonville.   | Fisher.     |                  |                        |                                     |                            |                  |          |                           |       |                       | 0.79   | -1.43                      | 0.37                       | 0.0                      | 2                                       | 15 | 7  | 9  | se.             | Wm. Lanier.             |
| Coleman.        | Coleman.    | 1,710            | 15                     | 82.0                                | - 1.3                      | 106              | 17       | 62                        | 18†   | 43                    | 1.69   | -0.41                      | 0.44                       | 0.0                      | 6                                       | 21 | 9  | 1  | s.              | R. M. Webb.             |
| Colorado.       | Mitchell.   | 2,068            | 15                     | 82.0                                | - 1.3                      | 106              | 17       | 62                        | 23    | 30                    | 2.56   | -1.20                      | 0.81                       | 0.0                      | 6                                       | 20 | 8  | 3  | s.              | R. B. Loggins.          |
| Columbus.       | Brazoria.   | 34               | 20                     | 83.2                                | + 1.4                      | 103              | 18       | 64                        | 23    | 30                    | 1.18   | -0.50                      | 0.68                       | 0.0                      | 3                                       | 17 | 4  | 10 | s.              | Mrs. Sophie Bridge.     |
| Comstock.       | Colorado.   | 206              | 5                      |                                     |                            |                  |          |                           |       |                       |        |                            |                            |                          |   |    |    |    |                 | A. D. Brown.            |
| Corpus Christi. | Valverde.   |                  |                        |                                     |                            |                  |          |                           |       |                       |        |                            |                            |                          |   |    |    |    |                 | U. S. Weather Bureau.   |
| Corsicana.      | Nueces.     | 20               | 22                     | 82.7                                | + 0.6                      | 95               | 21       | 73                        | 9     | 18                    | 3.71   | +1.43                      | 1.25                       | 0.0                      | 10                                      | 15 | 9  | 7  | se.             | E. L. Gibson.           |
| Crockett.       | Navarro.    | 445              | 20                     | 86.4                                | + 3.5                      | 112              | 18       | 68                        | 26    | 35                    | 0.87   | -1.16                      | 0.36                       | 0.0                      | 6                                       | 26 | 0  | 5  | ne.             | A. M. Bencher.          |
| Houston.        | DeWitt.     | 350              | 5                      | 87.4                                |                            | 114              | 18       | 70                        | 17    | 40                    | 0.32   |                            | 0.15                       | 0.0                      | 3                                       | 12 | 15 | 4  | s.              | H. R. Forbese.          |
| Dallas.         | Dallas.     | 177              | 20                     | 86.6                                | + 1.8                      | 109              | 20       | 70                        | 7     | 37                    | 1.44   | -0.39                      | 0.42                       | 0.0                      | 10                                      | 20 | 3  | 8  | s.              | G. A. Elsenlohr.        |
| Danevang.       | Wharton.    | 466              | 20                     | 86.4                                | + 3.2                      | 115              | 18       | 65                        | 23    | 38                    | 1.58   | +0.32                      | 0.88                       | 0.0                      | 6                                       | 18 | 2  | 11 | s.              | H. P. Hermansen.        |
| Decatur.        | Wise.       | 1,047            | 3                      | 86.1                                |                            | 108              | 5        | 67                        | 23    | 35                    | 3.65   |                            | 2.60                       | 0.0                      | 5                                       | 21 | 0  | 10 |                 | Agent F. W. & D. C. Ry. |
| Del Rio.        | Valverde.   | 952              | 3                      | 85.4                                | + 1.4                      | 108              | 19       | 68                        | 30    | 36                    | 0.31   | -2.38                      | 0.26                       | 0.0                      | 2                                       | 21 | 9  | 1  | e.              | U. S. Weather Bureau.   |
| Diablo.         | Cherokee.   | 575              | 11                     | 85.2                                | + 2.8                      | 111              | 18       | 69                        | 23†   | 43                    | 3.02   | +0.70                      | 2.25                       | 0.0                      | 4                                       | 14 | 12 | 5  | s.              | J. M. B. McKnight.      |
| Dublin.         | Erath.      | 1,466            | 14                     | 83.6                                | + 1.5                      | 103              | 6†       | 70                        | 23    | 30                    | 5.47   | +3.74                      | 3.82                       | 0.0                      | 5                                       | 13 | 14 | 4  | s.              | Jno. O. Shafer.         |
| Duval.          | Travis.     | 820              | 20                     | 84.6                                | - 0.6                      | 108              | 18       | 71                        | 1†    | 33                    | 1.17   | -0.59                      | 0.45                       | 0.0                      | 4                                       | 18 | 8  | 5  | s.              | J. C. Edgar.            |
| Eagle Pass.     | Maverick.   | 800              | 20                     | 89.6                                | + 3.7                      | 112              | 20       | 71                        | 27    | 33                    | 1.83   | -0.76                      | 1.00                       | 0.0                      | 4                                       | 6  | 21 | 4  | se.             | Jos. Metcalfe.          |
| Edna.           | Jackson.    |                  |                        |                                     |                            |                  |          |                           |       |                       | 1.20   |                            | 0.40                       | 0.0                      | 4                                       |    |    |    |                 | E. L. Fairless.         |
| El Paso.        | El Paso.    | 3,763            | 30                     | 78.8                                | + 1.2                      | 95               | 16       | 62                        | 31    | 49                    | 0.51   | -1.21                      | 0.15                       | 0.0                      | 7                                       | 12 | 16 | 3  | s.              | U. S. Weather Bureau.   |
| Encinal.        | La Salle.   | 1                | 86.7                   |                                     |                            | 110              | 19       | 70                        | 24†   | 34                    | 3.27   |                            | 0.95                       | 0.0                      | 5                                       | 9  | 10 | 7  | se.             | H. C. Braden.           |
| Fairland.       | Burnet.     |                  |                        |                                     |                            |                  |          |                           |       |                       |        |                            |                            |                          |   |    |    |    | R. L. Bush.     |                         |
| Falfurrias.     | Starr.      | 2                | 84.4                   |                                     |                            | 107              | 18       | 68                        | 18    | 41                    | 11.19  |                            | 5.16                       | 0.0                      | 7                                       | 17 | 8  | 6  | s.              | W. A. Gardner.          |
| Flatonia.       | Fayette.    | 465              | 1                      | 84.2                                |                            | 107              | 18†      | 69                        | 20    | 38                    | 2.28   |                            | 0.91                       | 0.0                      | 8                                       | 15 | 14 | 2  | s.              | Julius Lauz.            |
| Fort Clark.     | Kinney.     | 1,050            | 22                     | 85.3                                | + 0.3                      | 106              | 17†      | 69                        | 29    | 39                    | 0.49   | -1.44                      | 0.35                       | 0.0                      | 2                                       | 27 | 2  | 2  | e.              | Post Surgeon.           |
| Fort McIntosh.  | Webb.       | 480              | 23                     | 89.8                                | + 3.0                      | 110              | 18†      | 72                        | 24    | 31                    | 3.27   | +0.34                      | 1.57                       | 0.0                      | 6                                       | 14 | 0  | 17 |                 | Do.                     |
| Fort Stockton.  | Pecos.      | 3,050            | 4                      |                                     |                            |                  |          |                           |       |                       | 1.03   |                            | 0.42                       | 0.0                      | 4                                       |    |    |    |                 | H. H. Butz.             |
| Fort Worth.     | Tarrant.    | 670              | 14                     | 85.6                                | + 2.7                      | 112              | 18       | 70                        | 24    | 35                    | 2.38   | +0.51                      | 1.00                       | 0.0                      | 8                                       | 13 | 15 | 3  | s.              | U. S. Weather Bureau.   |
| Fredericksburg. | Gillespie.  | 1,742            | 20                     | 81.8 <sup>a</sup>                   | + 1.1                      | 104 <sup>a</sup> | 18       | 65 <sup>a</sup>           | 24    | 35 <sup>a</sup>       | 1.76   | -0.68                      | 0.70                       | 0.0                      | 7                                       | 10 | 19 | 2  | s.              | Arthur Strieger.        |
| Gainesville.    | Cooke.      | 738              | 20                     | 86.4                                | + 3.8                      | 111              | 18       | 64                        | 23    | 36                    | 2.57   | +0.31                      | 0.85                       | 0.0                      | 11                                      |    |    |    |                 | J. L. Hickson.          |
| Galveston.      | Galveston.  | 69               | 39                     | 83.4                                | + 0.8                      | 95               | 18       | 71                        | 7     | 18                    | 4.08   | -0.95                      | 1.83                       | 0.0                      | 9                                       | 15 | 13 | 3  | s.              | U. S. Weather Bureau.   |
| Gatesville.     | Corry.      | 795              | 5                      | 85.5                                |                            | 110              | 17       | 69                        | 19†   | 35                    | 2.40   |                            | 1.00                       | 0.0                      | 4                                       | 21 | 10 | 0  | sw.             | John Ryan.              |
| Georgetown.     | Williamson. | 750              | 14                     | 85.6                                | + 2.0                      | 112              | 18       | 68                        | 23†   | 41                    | 1.00   | -0.87                      | 0.51                       | 0.0                      | 5                                       | 15 | 16 | 0  | s.              | Prof. R. E. Young.      |
| Gonzales.       | Gonzales.   | 299              | 4                      |                                     |                            |                  |          |                           |       |                       | 2.42   |                            | 1.03                       | 0.0                      | 4                                       | 24 | 4  | 3  | s.              | J. M. Johnson.          |
| Graham.         | Young.      | 1,040            | 5                      | 83.8                                |                            | 108              | 4        | 54                        | 24    | 42                    | 5.40   |                            | 2.85                       | 0.0                      | 5                                       | 20 | 3  | 5  | s.              | C. W. Johnson.          |
| Grandfalls.     | Ward.       |                  |                        |                                     |                            |                  |          |                           |       |                       |        |                            |                            |                          |   |    |    |    | W. C. Bridwell. |                         |
| Grapevine.      | Tarrant.    | 670              | 19                     | 86.6                                | + 2.9                      | 115              | 18       | 69                        | 23    | 30                    | 0.63   | -0.96                      | 0.20                       | 0.0                      | 5                                       | 9  | 10 | 6  | s.              | W. J. Crowley.          |
| Greenville.     | Hunt.       | 550              | 9                      | 87.4                                |                            | 115              | 18       | 68                        | 23    | 39                    | 0.90   |                            | 0.45                       | 0.0                      | 4                                       | 17 | 21 | 6  | e.              | J. P. Regan.            |
| Hallettsville.  | Levaca.     | 235              | 18                     | 84.7                                | + 1.0                      | 104              | 20       | 69                        | 17    | 31                    | 0.49   | -1.62                      | 0.39                       | 0.0                      | 2                                       | 21 | 6  | 4  | s.              | Dr. J. E. Lay.          |
| Haskell.        | Haskell.    | 4,013            | 18                     | 85.1                                | + 1.2                      | 109              | 6        | 65                        | 23    | 38                    | 2.17   | +0.66                      | 1.78                       | 0.0                      | 3                                       | 13 | 9  | 9  | s.              | P. D. Saunders.         |
| Hebronville.    | Duval.      |                  |                        |                                     |                            |                  |          |                           |       |                       | 1.88   |                            | 0.90                       | 0.0                      | 5                                       | 13 | 8  | 10 | s.              | Henry Edds.             |
| Hempstead.      | Waller.     | 254              | 5                      |                                     |                            |                  |          |                           |       |                       | 1.68   |                            | 0.82                       | 0.0                      | 3                                       | 19 | 10 | 2  | s.              | J. H. Hancock.          |
| Henderson.      | Rusk.       |                  |                        |                                     |                            |                  |          |                           |       |                       | 2.88   | +1.33                      | 1.35                       | 0.0                      | 6                                       |    |    |    |                 | M. Kangerga.            |
| Hewitt.         | McLennan.   | 664              | 14                     |                                     |                            |                  |          |                           |       |                       |        |                            |                            |                          |   |    |    |    |                 | I. H. Earle.            |
| Hillsboro.      | Hill.       | 628              | 17                     | 88.3                                |                            | 109              | 17       | 70                        | 8     | 32                    | 1.89   | +0.75                      | 1.23                       | 0.0                      | 2                                       |    |    |    |                 | Thompson & Campbell.    |
| Hondo.          | Medina.     | 901              | 7                      | 87.8                                |                            | 108              | 19       | 70                        | 22†   | 36                    | 1.52   | -0.07                      | 0.35                       | 0.0                      | 4                                       | 20 | 11 | 0  | se.             | H. E. Hass.             |
| Houston.        | Harris.     | 53               | 20                     | 86.0                                | + 3.8                      | 108              | 19       | 71                        | 23†   | 34                    | 0.78   | -0.37                      | 0.35                       | 0.0                      | 4                                       |    |    |    |                 |                         |

TABLE 1.—*Climatological data for August, 1909. District No. 8—Continued.*

| Stations.                       | Counties.      | Elevation, feet. | Length of record, yrs. | Temperature, in degrees Fahrenheit. |                            |          |       | Precipitation, in inches. |       |                       |        | Number of rainy days, .01 inch or more. | Number of partly cloudy days. | Number of clear days. | Sky. | Prevailing wind direction. | Observers. |     |     |
|---------------------------------|----------------|------------------|------------------------|-------------------------------------|----------------------------|----------|-------|---------------------------|-------|-----------------------|--------|---|-------------------------------|-----------------------|------|----------------------------|------------|-----|-----|
|                                 |                |                  |                        | Mean.                               | Departure from the normal. | Highest. | Date. | Lowest.                   | Date. | Greatest daily range. | Total. |   |                               |                       |      |                            |            |     |     |
| Texas—Cont'd.                   |                |                  |                        |                                     |                            |          |       |                           |       |                       |        |   |                               |                       |      |                            |            |     |     |
| Panter.                         | Hood.          | 1,000            | 19                     |                                     |                            |          |       |                           |       |                       | 2.08   | - 1.33                                  | 1.62                          | 0.0                   | 4    |                            |            |     |     |
| Pierce.                         | Wharton.       | 3                | 80.2                   |                                     | 96                         | 18       | 66    | 23†                       | 25    | 1.62                  | 0.54   | 0.0                                     | 6                             | 12                    | 16   | 3                          |            |     |     |
| Plainview.                      | Hale.          | 3,370            | 1                      | 77.8                                |                            | 100      | 17    | 58                        | 24    | 3.15                  | 0.85   | 0.0                                     | 3                             | 14                    | 16   | 1                          | s.         |     |     |
| Port Lavaca.                    | Calhoun.       | 20               | 8                      | 84.2                                |                            | 100      | 18    | 71                        | 23    | 2.49                  | 0.77   | 0.0                                     | 3                             | 16                    | 11   | 4                          | s.         |     |     |
| Ricardo.                        | Nueces.        |                  |                        | 85.3                                |                            | 107      | 19    | 68                        | 18    | 7.46                  | 5.71   | 0.0                                     | 8                             | 17                    | 12   | 2                          | se.        |     |     |
| Riverside <sup>jj</sup> .       | Walker.        | 169              | 5                      |                                     |                            |          |       |                           |       | 4.25                  | 2.00   | 0.0                                     | 3                             | 20                    | 1    | 10                         | a.         |     |     |
| Robert Lee <sup>jj</sup> .      | Coke.          | 1,850            | 1                      | 83.0                                |                            | 104      | 18    | 63                        | 23    | 30                    | 0.88   | 0.50                                    | 0.0                           | 4                     | 20   | 8                          | 3          | se. |     |
| Rockland <sup>jj</sup> .        | Tyler.         | 136              | 5                      |                                     |                            |          |       |                           |       | 1.35                  | 0.64   | 0.0                                     | 5                             | 22                    | 3    | 6                          | s.         |     |     |
| Rossville.                      | Atascosa.      | 558              | 2                      | 85.8                                |                            | 108      | 19†   | 69                        | 23†   | 35                    | 2.12   | 0.79                                    | 0.0                           | 6                     | 8    | 22                         | 1          | se. |     |
| Runge.                          | Karnes.        | 308              | 14                     |                                     |                            |          |       |                           |       | 1.73                  | + 0.42 | 0.86                                    | 0.0                           | 3                     |      |                            |            |     |     |
| Sabinal.                        | Uvalde.        | 964              | 5                      | 85.8                                |                            | 110      | 4†    | 66                        | 3†    | 37                    | 4.26   | 2.75                                    | 0.0                           | 6                     | 5    | 12                         | 14         | e.  |     |
| San Angelo.                     | Tom Green.     | 1                |                        |                                     |                            |          |       |                           |       |                       |        |   |                               |                       |      |                            |            |     |     |
| San Antonio.                    | Bexar.         | 701              | 24                     | 84.4                                | + 2.4                      | 107      | 20    | 70                        | 25    | 31                    | 1.70   | - 1.00                                  | 0.65                          | 0.0                   | 7    | 14                         | 13         | 4   | se. |
| San Augustine.                  | San Augustine. |                  |                        |                                     |                            |          |       |                           |       |                       |        |   |                               |                       |      |                            |            |     |     |
| San Juanita <sup>j</sup> .      | Hidalgo.       |                  |                        | 89.0                                |                            | 106      | 18†   | 71                        | 28    | 32                    | 6.08   | 3.39                                    | 0.0                           | 7                     | 4    | 17                         | 10         | sc. |     |
| San Marcos <sup>jj</sup> .      | Hayes.         | 588              | 16                     | 83.6                                | + 0.2                      | 105      | 18†   | 67                        | 17    | 37                    | 2.11   | + 0.40                                  | 0.74                          | 0.0                   | 6    | 22                         | 0          | 9   | s.  |
| San Saba.                       | San Saba.      | 1,712            | 5                      | 83.6                                |                            | 109      | 18    | 63                        | 24    | 43                    | 0.41   | 0.18                                    | 0.0                           | 4                     | 19   | 12                         | 0          | s.  |     |
| Santa Gertrudes.                | Nueces.        | 7                |                        |                                     |                            |          |       |                           |       |                       | 5.81   | 1.90                                    | 0.0                           | 6                     |      |                            |            |     |     |
| Seymour.                        | Baylor.        | 1,180            | 3                      | 84.4                                |                            | 106      | 7     | 65                        | 23    | 34                    | 2.86   | 1.15                                    | 0.0                           | 4                     | 21   | 7                          | 3          | se. |     |
| Somerville.                     | Burleson.      | 251              |                        |                                     |                            |          |       |                           |       |                       | 0.76   | 0.70                                    | 0.0                           | 3                     | 11   | 0                          | 20         | s.  |     |
| Sonora.                         | Sutton.        | 2,200            | 6                      | 80.7                                |                            | 106      | 19    | 60                        | 23†   | 44                    | 1.74   | 0.64                                    | 0.0                           | 6                     | 1    | 30                         | 0          | e.  |     |
| Sugarland.                      | Fort Bend.     | 79               | 11                     | 84.9                                | + 1.7                      | 108      | 18    | 69                        | 4†    | 33                    | 3.37   | + 0.27                                  | 2.50                          | 0.0                   | 6    | 21                         | 9          | 1   | s.  |
| Taylor.                         | Williamson.    | 583              | 8                      | 84.4                                | + 2.7                      | 109      | 18    | 68                        | 20    | 35                    | 2.73   | + 0.26                                  | 1.95                          | 0.0                   | 6    | 21                         | 8          | 2   | s.  |
| Temple.                         | Bell.          | 630              | 15                     | 85.9                                | + 3.3                      | 110      | 18    | 68                        | 21    | 35                    | 4.94   | + 3.04                                  | 2.14                          | 0.0                   | 5    | 20                         | 6          | 5   | s.  |
| Tilden <sup>d</sup> .           | McMullen.      | 3                | 87.5                   |                                     |                            | 113      | 19    | 69                        | 23    | 42                    | 3.20   |   | 1.11                          | 0.0                   | 5    | 18                         | 4          | se. |     |
| Uvalde.                         | Uvalde.        | 937              | 1                      | 85.8                                |                            | 110      | 18†   | 69                        | 23†   | 40                    | 3.13   |   | 1.38                          | 0.0                   | 6    | 18                         | 0          | 13  | se. |
| Valley Junction <sup>jj</sup> . | Robertson.     | 289              | 4                      |                                     |                            |          |       |                           |       |                       | 1.00   |   | 1.00                          | 0.0                   | 1    | 23                         | 0          | 8   |     |
| Victoria <sup>jj</sup> .        | Victoria.      | 187              | 11                     | 84.4                                | + 1.9                      | 101      | 18†   | 71                        | 21†   | 27                    | 2.51   |   | 1.12                          | 0.0                   | 5    |                            |            |     |     |
| Waco <sup>jj</sup> .            | McLennan.      | 424              | 20                     | 87.6                                | + 2.8                      | 109      | 18    | 73                        | 17†   | 34                    | 3.16   | + 1.19                                  | 1.71                          | 0.0                   | 7    | 21                         | 2          | 8   | s.  |
| Waxahachie <sup>jj</sup> .      | Ellis.         | 556              | 13                     | 85.2                                | + 0.6                      | 115      | 18    | 64                        | 22    | 41                    | 1.36   | - 0.39                                  | 0.59                          | 0.0                   | 7    | 21                         | 3          | 7   | e.  |
| Weatherford <sup>jj</sup> .     | Parker.        | 864              | 20                     | 85.2                                | + 2.7                      | 107      | 18    | 68                        | 23    | 34                    | 2.93   | + 1.26                                  | 1.26                          | 0.0                   | 8    | 22                         | 2          | 7   | n.  |
| Wharton <sup>jj</sup> .         | Wharton.       | 105              | 7                      | 83.2                                |                            | 97       | 6†    | 69                        | 31    | 26                    | 0.20   |   | 0.20                          | 0.0                   | 1    | 23                         | 3          | 5   | s.  |
| Wills Point <sup>k</sup> .      | Van Zandt.     | 524              | 4                      | 87.0                                |                            | 115      | 18    | 70                        | 10†   | 43                    | 1.59   |   | 0.92                          | 0.0                   | 4    |                            |            |     | s.  |
| Zapata.                         |                |                  |                        | 89.2                                |                            | 114      | 21    | 69                        | 24    | 40                    | 7.50   |   | 3.10                          | 0.0                   | 7    | 12                         | 11         | 8   | se. |

• Precipitation included in that of the next measurement.

• Temperature extremes are from observed readings of the dry-bulb; means are computed from observed readings.

† Also on other dates.

‡ Data are from standard instruments not supplied by the U. S. Weather Bureau.

§ Instruments are read in the morning; the maximum temperature then read is charged to the preceding day, on which it almost always occurs.

|| Estimated by observer.

||| Precipitation for the 24 hours ending on the morning when it is measured.

T. Precipitation is less than 0.01 inch rain or melted snow.

\*, †, ‡, etc., indicate, respectively, 1, 2, 3, etc., days missing from the record.

E. H. Snider.

R. B. Pointer.

J. F. Sander.

J. H. Bickford.

Lindsay Waters.

Mrs. C. W. Higdon.

H. D. Pearce.

D. W. Bellamy.

W. F. M. Ross.

Reiffert &amp; Frobese.

Jas. Johnston.

C. W. Goff.

U. S. Weather Bureau.

F. A. Wilson.

J. B. McAllen.

Miss L. C. Ford.

Jas. Burns.

J. B. Wright, jr.

F. M. Deaver.

W. A. Dolan.

Mike Murphy.

O. M. Bakke.

U. S. Weather Bureau.

W. B. Tyler.

Wm. Kuykendall.

F. M. Getzendaner.

T. M. Williams.

C. C. Zirjacks.

E. H. Hall.

C. D. Longserre.

Miss J. Stickfort.

Mrs. F. M. Hughes.

W. W. Gibbard.

F. H. Earnest.

TABLE 2.—*Daily precipitation for August, 1909. District No. 8, Texas and Rio Grande Valley.*

| Stations.                   | River basins.   | Day of month. |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    | Total. |      |  |
|-----------------------------|-----------------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|----|-----|-----|-----|-----|-----|-----|-----|----|----|-----|-----|-----|----|----|----|--------|------|--|
|                             |                 | 1             | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10   | 11  | 12  | 13  | 14 | 15  | 16  | 17  | 18  | 19  | 20  | 21  | 22 | 23 | 24  | 25  | 26  | 27 | 28 | 29 | 30     | 31   |  |
| <i>Colorado</i>             |                 |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Amethyst (near).....        | Rio Grande..... | .06           | .08 | .09 | T.  | T.  |     | .18 | T.  | .49 | .137 | T.  | .30 | .07 |    | .70 | .21 | .02 | .01 | .08 | .10 | .01 |    |    | .20 | .09 | .01 |    |    |    |        | 4.07 |  |
| Blanca.....                 | Trinchera.....  |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Cumbres.....                | Conejos.....    |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Garnett.....                | Rio Grande..... |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Hermit.....                 | do.....         | .02           | .12 | .50 | .05 | .28 | .06 | .20 | .03 | .45 | .05  | .11 |     | .15 |    | T.  | .04 | .14 |     |     |     |     |    |    |     |     |     |    |    |    | 1.47   |      |  |
| La Veta Pass.....           | Trinchera.....  |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Manassa.....                | Conejos.....    |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Platoro.....                | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Saguache.....               | San Luis.....   |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| San Luis.....               | Culebra.....    |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Wagon Wheel Gap.....        | Rio Grande..... |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| <i>New Mexico</i>           |                 |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Agricultural College.....   | Rio Grande..... |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Alamogordo (near).....      | do.....         | .10           | .08 |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Alamogordo (2).....         | do.....         | .02           |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Albuquerque.....            | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Amisett.....                | do.....         | .04           | .03 | .05 | .35 | .01 |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Ancho.....                  | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Aspen Grove Ranch.....      | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Bateman's Ranch.....        | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Bluewater.....              | do.....         | .30           | .18 |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Bluewater Reservoir.....    | do.....         | .71           | T.  |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Bosq.....                   | Pecos.....      |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Capitan.....                | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Carlsbad.....               | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Carrizoso (1).....          | Rio Grande..... |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Carrizoso (2).....          | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Chama.....                  | do.....         | .24           | .46 | .08 |     | T.  |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Cloudcroft (1).....         | Pecos.....      |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Cloudcroft (2).....         | do.....         | .62           | .13 |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Corona.....                 | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Coyote.....                 | Rio Grande..... | .58           | .28 | .08 |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Cundyo.....                 | do.....         | .18           | .50 | .20 |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Demonstration Farm.....     | Pecos.....      |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Duran (1).....              | do.....         | .08           |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Duran (2).....              | do.....         | .23           |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Edison Mine.....            | Rio Grande..... |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Elk (near).....             | Pecos.....      |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Escondido.....              | Rio Grande..... |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Espanola.....               | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Estancia.....               | Pecos.....      |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Fort Stanton.....           | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Fort Sumner.....            | Pecos.....      |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Gallinas Planting Stat..... | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Harvey's Upper Ranch.....   | Rio Grande..... | .03           | .40 | .25 | .15 | .19 |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Hillsboro.....              | do.....         | .40           | .73 | .34 |     | T.  |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Hodges.....                 | Rio Grande..... |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Hondo Reservoir.....        | Pecos.....      |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Hope.....                   | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Hopewell.....               | Rio Grande..... |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Laguna.....                 | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Lagunita.....               | Pecos.....      |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| La Huerta.....              | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Lake Valley.....            | Rio Grande..... |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Las Vegas.....              | Pecos.....      |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Los Lunas.....              | Rio Grande..... |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Los Tanos.....              | Pecos.....      |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Magdalena.....              | Rio Grande..... |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Mineral Hill.....           | Pecos.....      |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Monument.....               | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Mountainair.....            | Rio Grande..... |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Newman.....                 | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Noria.....                  | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Orogrande.....              | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Oscura (near).....          | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Oscura (2).....             | do.....         |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Otis.....                   | Pecos.....      |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Otto.....                   | Rio Grande..... |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |
| Pastura.....                | Pecos.....      |               |     |     |     |     |     |     |     |     |      |     |     |     |    |     |     |     |     |     |     |     |    |    |     |     |     |    |    |    |        |      |  |

TABLE 2.—*Daily precipitation for August, 1909. District No. 8—Continued.*

TABLE 2.—*Daily precipitation for August, 1909. District No. 8—Continued.*

TABLE 3.—*Maximum and minimum temperatures at selected stations August, 1909.* District No. 8, Texas and Rio Grande Valley.

| Date. | Colorado. |      |           |      |                          | New Mexico. |      |      |               |      |      |              |      |      |           |      |      | Texas.    |      |      |             |      |                   |                   |      |      |              |      |      |              |      |                 |  |
|-------|-----------|------|-----------|------|--------------------------|-------------|------|------|---------------|------|------|--------------|------|------|-----------|------|------|-----------|------|------|-------------|------|-------------------|-------------------|------|------|--------------|------|------|--------------|------|-----------------|--|
|       | Garnett.  |      | San Luis. |      | Agricultural<br>College. | Carlsbad.   |      |      | Fort Stanton. |      |      | Mountainair. |      |      | Rosedale. |      |      | Santa Fe. |      |      | Santa Rosa. |      |                   | Abilene.          |      |      | Big Springs. |      |      | Brownsville. |      | Corpus Christi. |  |
|       | Max.      | Min. | Max.      | Min. | Max.                     | Min.        | Max. | Min. | Max.          | Min. | Max. | Min.         | Max. | Min. | Max.      | Min. | Max. | Min.      | Max. | Min. | Max.        | Min. | Max.              | Min.              | Max. | Min. | Max.         | Min. | Max. | Min.         | Max. |                 |  |
| 1...  | 82        | 44   | 76        | 47   | 96                       | 69          | 96   | 65   | 87            | 52   | 87   | 54           | 81   | 57   | 92        | 64   | 79   | 53        | 95   | 63   | 99          | 74   | 99                | 73                | 92   | 76   | 89           | 76   | 89   | 76           |      |                 |  |
| 2...  | 73        | 48   | 75        | 47   | 95                       | 64          | 93   | 63   | 85            | 50   | 87   | 53           | 80   | 56   | 92        | 61   | 78   | 57        | 95   | 61   | 96          | 72   | 101               | 73                | 92   | 76   | 89           | 80   | 89   | 80           |      |                 |  |
| 3...  | 79        | 45   | 71        | 46   | 98                       | 63          | 92   | 65   | 83            | 51   | 85   | 53           | 82   | 58   | 90        | 64   | 76   | 57        | 95   | 63   | 97          | 74   | 100               | 74                | 94   | 74   | 86           | 78   | 86   | 78           |      |                 |  |
| 4...  | 75        | 46   | 64        | 49   | 93                       | 66          | 92   | 64   | 83            | 51   | 85   | 54           | 80   | 55   | 91        | 64   | 73   | 56        | 95   | 60   | 99          | 76   | 98                | 75                | 93   | 74   | 89           | 78   | 89   | 78           |      |                 |  |
| 5...  | 81        | 43   | 78        | 42   | 95                       | 65          | 96   | 65   | 87            | 56   | 90   | 53           | 83   | 55   | 93        | 61   | 80   | 56        | 99   | 62   | 99          | 76   | 101               | 73                | 96   | 71   | 88           | 77   | 88   | 77           |      |                 |  |
| 6...  | 83        | 45   | 80        | 46   | 96                       | 65          | 98   | 67   | 90            | 56   | 93   | 58           | 81   | 56   | 95        | 65   | 81   | 56        | 99   | 69   | 99          | 76   | 103               | 75                | 96   | 74   | 88           | 78   | 88   | 78           |      |                 |  |
| 7...  | 83        | 48   | 80        | 47   | 96                       | 60          | 94   | 66   | 82            | 55   | 89   | 57           | 83   | 58   | 94        | 63   | 81   | 58        | 99   | 66   | 99          | 78   | 103               | 75                | 94   | 73   | 88           | 80   | 89   | 80           |      |                 |  |
| 8...  | 82        | 50   | 82        | 49   | 92                       | 67          | 92   | 71   | 80            | 57   | 88   | 57           | 81   | 54   | 88        | 64   | 78   | 62        | 93   | 69   | 89          | 72   | 103               | 87                | 90   | 74   | 85           | 77   | 85   | 77           |      |                 |  |
| 9...  | 80        | 46   | 76        | 45   | 91                       | 61          | 90   | 60   | 79            | 54   | 75   | 53           | 75   | 51   | 85        | 60   | 74   | 54        | 85   | 64   | 85          | 71   | 100               | 85                | 94   | 74   | 86           | 73   | 88   | 73           |      |                 |  |
| 10... | 81        | 52   | 72        | 54   | 92                       | 68          | 89   | 68   | 78            | 55   | 80   | 54           | 78   | 55   | 88        | 64   | 74   | 57        | 87   | 60   | 88          | 89   | 72                | 100               | 89   | 96   | 76           | 87   | 77   | 87           | 77   |                 |  |
| 11... | 80        | 44   | 79        | 44   | 94                       | 72          | 91   | 67   | 80            | 56   | 88   | 53           | 77   | 56   | 91        | 64   | 79   | 56        | 94   | 64   | 93          | 71   | 99                | 68                | 86   | 75   | 86           | 76   | 86   | 76           |      |                 |  |
| 12... | 83        | 51   | 82        | 48   | 96                       | 64          | 95   | 66   | 83            | 55   | 91   | 57           | 80   | 56   | 91        | 65   | 80   | 56        | 99   | 64   | 94          | 72   | 100               | 69                | 91   | 75   | 87           | 77   | 87   | 77           |      |                 |  |
| 13... | 80        | 45   | 80        | 46   | 91                       | 68          | 98   | 70   | 86            | 59   | 88   | 58           | 81   | 59   | 93        | 67   | 82   | 58        | 97   | 65   | 84          | 66   | 91                | 73                | 91   | 78   | 89           | 80   | 89   | 80           |      |                 |  |
| 14... | 82        | 49   | 79        | 50   | 92                       | 67          | 92   | 69   | 82            | 57   | 87   | 56           | 79   | 57   | 91        | 66   | 77   | 59        | 92   | 64   | 94          | 72   | 98                | 73                | 91   | 77   | 88           | 80   | 88   | 80           |      |                 |  |
| 15... | 81        | 45   | 80        | 57   | 91                       | 66          | 96   | 70   | 83            | 54   | 84   | 54           | 75   | 55   | 95        | 66   | 77   | 58        | 92   | 65   | 95          | 73   | 100               | 73                | 92   | 74   | 88           | 83   | 78   | 78           |      |                 |  |
| 16... | 80        | 45   | 80        | 48   | 93                       | 65          | 99   | 65   | 86            | 53   | 90   | 56           | 83   | 55   | 95        | 63   | 81   | 56        | 95   | 61   | 97          | 71   | 103               | 73                | 94   | 74   | 90           | 75   | 87   | 74           |      |                 |  |
| 17... | 81        | 47   | 81        | 48   | 94                       | 67          | 100  | 63   | 87            | 54   | 87   | 58           | 85   | 57   | 97        | 63   | 85   | 60        | 92   | 62   | 101         | 73   | 106               | 66                | 96   | 74   | 92           | 74   | 87   | 74           |      |                 |  |
| 18... | 83        | 50   | 75        | 56   | 92                       | 67          | 102  | 64   | 82            | 55   | 78   | 56           | 79   | 56   | 96        | 62   | 79   | 56        | 95   | 69   | 101         | 73   | 107               | 67                | 98   | 74   | 90           | 74   | 87   | 74           |      |                 |  |
| 19... | 81        | 50   | 75        | 50   | 94                       | 66          | 99   | 69   | 82            | 54   | 87   | 54           | 82   | 55   | 92        | 67   | 73   | 56        | 89   | 66   | 97          | 74   | 100               | 73                | 96   | 75   | 93           | 76   | 87   | 76           |      |                 |  |
| 20... | 75        | 47   | 74        | 53   | 95                       | 64          | 91   | 67   | 77            | 56   | 75   | 56           | 78   | 55   | 83        | 63   | 74   | 57        | 80   | 63   | 90          | 75   | 86                | 67                | 96   | 76   | 93           | 78   | 86   | 78           |      |                 |  |
| 21... | 83        | 48   | 77        | 49   | 95                       | 62          | 89   | 67   | 84            | 58   | 80   | 56           | 76   | 56   | 85        | 63   | 78   | 54        | 91   | 61   | 93          | 73   | 93                | 72                | 97   | 75   | 85           | 80   | 88   | 80           |      |                 |  |
| 22... | 84        | 46   | 85        | 48   | 92                       | 66          | 83   | 69   | 79            | 55   | 73   | 56           | 83   | 58   | 85        | 68   | 78   | 59        | 91   | 63   | 94          | 73   | 92                | 70                | 93   | 75   | 90           | 80   | 88   | 80           |      |                 |  |
| 23... | 84        | 45   | 78        | 49   | 91                       | 69          | 89   | 65   | 79            | 55   | 83   | 55           | 78   | 58   | 86        | 65   | 76   | 58        | 91   | 63   | 93          | 74   | 95                | 69                | 93   | 74   | 92           | 76   | 87   | 76           |      |                 |  |
| 24... | 81        | 48   | 77        | 48   | 90                       | 68          | 91   | 61   | 83            | 49   | 86   | 52           | 80   | 55   | 87        | 57   | 78   | 55        | 95   | 63   | 89          | 65   | 98                | 68                | 93   | 72   | 85           | 77   | 85   | 77           |      |                 |  |
| 25... | 83        | 46   | 75        | 49   | 93                       | 60          | 93   | 58   | 84            | 47   | 82   | 53           | 83   | 55   | 89        | 57   | 76   | 56        | 95   | 61   | 91          | 71   | 96                | 68                | 90   | 75   | 86           | 74   | 86   | 74           |      |                 |  |
| 26... | 79        | 45   | 74        | 44   | 93                       | 62          | 90   | 65   | 83            | 51   | 82   | 55           | 81   | 54   | 88        | 60   | 75   | 59        | 90   | 62   | 91          | 72   | 96                | 73                | 88   | 76   | 87           | 76   | 87   | 76           |      |                 |  |
| 27... | 80        | 46   | 78        | 46   | 92                       | 65          | 91   | 62   | 84            | 50   | 88   | 54           | 80   | 54   | 88        | 61   | 78   | 58        | 94   | 62   | 96          | 71   | 96                | 69                | 81   | 73   | 83           | 73   | 83   | 73           |      |                 |  |
| 28... | 72        | 43   | 70        | 40   | 84                       | 73          | 89   | 65   | 77            | 51   | 79   | 53           | 78   | 53   | 83        | 60   | 76   | 59        | 93   | 59   | 93          | 71   | 97                | 67                | 87   | 75   | 84           | 77   | 84   | 77           |      |                 |  |
| 29... | 67        | 48   | 75        | 46   | 83                       | 65          | 83   | 67   | 66            | 56   | 66   | 54           | 61   | 52   | 78        | 63   | 67   | 56        | 74   | 67   | 88          | 74   | 89                | 71                | 88   | 74   | 86           | 80   | 88   | 80           |      |                 |  |
| 30... | 69        | 54   | 67        | 46   | 86                       | 66          | 86   | 67   | 76            | 58   | 76   | 56           | 70   | 55   | 82        | 66   | 68   | 56        | 81   | 58   | 92          | 68   | 88                | 69                | 95   | 75   | 93           | 75   | 85   | 75           |      |                 |  |
| 31... | 73        | 44   | 68        | 46   | 91                       | 60          | 91   | 63   | 82            | 49   | 84   | 51           | 78   | 52   | 85        | 62   | 76   | 54        | 90   | 59   | 95          | 70   | 96                | 68                | 93   | 70   | 94           | 88   | 88   | 78           |      |                 |  |
| Mns   | 79.5      | 46.9 | 76.2      | 47.8 | 92.4                     | 65.5        | 92.6 | 65.5 | 81.9          | 53.7 | 83.6 | 54.7         | 78.9 | 55.4 | 89.3      | 63.1 | 76.9 | 56.8      | 92.1 | 63.0 | 93.8        | 72.1 | 97.9 <sup>b</sup> | 70.6 <sup>b</sup> | 91.6 | 74.6 | 88.4         | 77.0 |      |              |      |                 |  |

## Texas.

| Date. | Del Rio. |      | El Paso. |      | Fort McIntosh. |      | Fort Stockton. |      | Fort Worth. |      | Galveston. |      | Hallettville. |      | Houston. |      | Lufkin. |      | Palestine. |      | Plainview. |      | San Antonio. |      | Seymour. |      | Taylor. |      |
|-------|----------|------|----------|------|----------------|------|----------------|------|-------------|------|------------|------|---------------|------|----------|------|---------|------|------------|------|------------|------|--------------|------|----------|------|---------|------|
|       | Max.     | Min. | Max.     | Min. | Max.           | Min. | Max.           | Min. | Max.        | Min. | Max.       | Min. | Max.          | Min. | Max.     | Min. | Max.    | Min. | Max.       | Min. | Max.       | Min. | Max.         | Min. | Max.     | Min. | Max.    | Min. |
| 1...  | 97       | 70   | 93       | 70   | 102            | 78   | 94             | 65   | 92          | 78   | 81         | 75   | 91            | 74   | 93       | 74   | 93      | 72   | 84         | 76   | 92         | 64   | 94           | 73   | 103      | 70   | 92      | 73   |
| 2...  | 95       | 76   | 94       | 71   | 103            | 80   | 93             | 64   | 98          | 76   | 84         | 70   | 94            | 74   | 93       | 72   | 97      | 72   | 96         | 74   | 93         | 65   | 96           | 74   | 102      | 68   | 95      | 73   |
| 3...  | 95       | 75   | 91       | 72   | 102            | 79   | 93             | 65   | 100         | 78   | 89         | 80   | 95            | 74   | 97       | 75   | 97      | 75   | 98         | 75   | 93         | 65   | 96           | 75   | 100      | 77   | 98      | 73   |
| 4...  | 97       | 74   | 91       | 73   | 103            | 79   | 93             | 64   | 104         | 79   | 89         | 80   | 95            | 74   | 98       | 73   | 97      | 72   | 96         | 75   | 94         | 74   | 96           | 74   | 102      | 79   | 98      | 73   |
| 5...  | 98       | 76   | 94       | 73   | 104            | 79   | 94             | 64   | 102         | 82   | 89         | 80   | 95            | 74   | 99       | 74   | 99      | 72   | 97         | 78   | 96         | 66   | 97           | 74   | 103      | 77   | 97      | 74   |
| 6...  | 99       | 75   | 95       | 73   | 104            | 79   | 96             | 65   | 100         | 80   | 88         | 81   | 95            | 74   | 98       | 75   | 96      | 73   | 96         | 76   | 96         | 69   | 97           | 73   | 104      | 78   | 98      | 73   |
| 7...  | 98       | 76   | 94       | 72   | 103            | 79   | 94             | 65   | 96          | 73   | 85         | 71   | 95            | 75   | 94       | 74   | 93      | 72   | 94         | 72   | 96         | 67   | 97           | 73   | 106      | 87   | 97      | 73   |
| 8...  | 96       | 75   | 93       | 70   | 101            | 79   | 96             | 66   | 84          | 72   | 83         | 74   | 90            | 73   | 88       | 75   | 92      | 73   | 82         | 71   | 89         | 66   | 92           | 71   | 94       | 75   | 88      | 72   |
| 9...  | 92       | 74   | 88       | 67   | 98             | 79   | 89             | 61   | 89          | 74   | 86         | 80   | 89            | 75   | 93       | 74   | 90      | 74   | 80         | 86   | 91         | 71   | 85           | 71   | 87       | 72   | 82      | 72   |
| 10... | 95       | 71   | 89       | 72   | 99             | 75   | 88             | 66   | 94          | 75   | 86         | 78   | 94            | 75   | 95       | 75   | 95      | 73   | 93         | 88   | 64         | 90   | 72           | 92   | 76       | 95   | 74      |      |
| 11... | 97       | 73   | 90       | 73   | 97             | 79   | 90             | 65   | 94          | 76   | 84         | 76   | 94            | 76   | 94       | 75   | 93      | 72   | 91         | 72   | 92         | 63   | 94           | 74   | 93       | 72   | 94      | 74   |
| 12... | 96       | 75   | 95       | 70   | 100            | 77   | 95             | 66   | 95          | 76   | 85         | 72   | 94            | 75   | 92       | 75   | 93      | 72   | 90         | 71   | 93         | 64   | 93           | 74   | 97       | 76   | 94      | 74   |
| 13... | 98       | 78   | 90       | 68   | 102            | 77   | 98             | 67   | 80          | 71   | 89         | 81   | 94            | 77   | 97       | 74   | 96      | 72   | 86         | 72   | 88         | 63   | 96           | 75   | 87       | 75   | 95      | 74   |
| 14... | 97       | 76   | 85       | 69   | 101            | 79   | 98             | 67   | 94          | 76   | 88         | 82   | 94            | 75   | 96       | 75   | 98      | 73   | 94         | 75   | 89         | 66   | 96           | 76   | 92       | 70   | 96      | 75   |
| 15... | 98       | 76   | 92       | 67   | 102            | 78   | 98             | 67   | 98          | 75   | 88         | 81   | 96            | 74   | 98       | 75   | 97      | 72   | 94         | 74   | 92         | 69   | 96           | 75   | 95       | 74   | 96      | 74   |
| 16... | 99       | 70   | 95       | 66   | 103            | 78   | 98             | 67   | 102         | 76   | 89         | 79   | 98            | 73   | 101      | 72   | 102     | 73   | 99         | 74   | 98         | 64   | 99           | 73   | 98       | 70   | 100     | 72   |
| 17... | 105      | 71   | 93       | 68   | 108            | 80   | 98             | 67   | 106         | 76   | 94         | 78   | 100           | 69   | 104      | 77   | 107     | 73   | 100        | 76   | 100        | 64   | 102          | 72   | 103      | 68   | 105     | 70   |
| 18... | 107      | 71   | 90       | 68   | 110            | 80   | 98             | 67   | 112         | 77   | 95         | 77   | 103           | 73   | 108      | 74   | 109     | 76   | 103        | 81   | 93         | 64   | 105          | 76   | 100      | 68   | 109     | 75   |
| 19... | 108      | 74   | 95       | 70   | 110            | 80   | 98             | 67   | 101         | 79   | 93         | 79   | 103           | 74   | 107      | 76   | 110     | 76   | 103        | 80   | 92         | 64   | 105          | 76   | 98       | 70   | 108     | 77   |
| 20... | 105      | 78   | 95       | 72   | 110            | 80   | 98             | 67   | 93          | 74   | 94         | 78   | 104           | 74   | 107      | 77   | 105     | 78   | 96         | 78   | 83         | 63   | 107          | 76   | 95       | 73   | 100     | 68   |
| 21... | 97       | 76   | 94       | 68   | 105            | 80   | 98             | 67   | 95          | 73   | 93         | 81   | 95            | 75   | 106      | 73   | 99      | 71   | 97         | 74   | 98         | 67   | 98           | 74   | 95       | 68   | 95      | 74   |
| 22... | 98       | 74   | 90       | 71   | 103            | 80   | 98             | 67   | 96          | 73   | 89         | 80   | 96            | 74   | 98       | 74   | 100     | 70   | 98         | 72   | 89         | 65   | 98           | 74   | 97       | 71   | 96      | 73   |
| 23... | 95       | 73   | 88       | 69   | 101            | 76   | 98             | 67   | 97          | 72   | 90         | 75   | 95            | 70   | 98       | 71   | 96      | 72   | 95         | 74   | 92         | 61   | 95           | 71   | 95       | 65   | 95      | 71   |
| 24... | 99       | 70   | 90       | 69   | 103            | 73   | 98             | 67   | 93          | 70   | 84         | 74   | 93            | 71   | 91       | 71   | 90      | 70   | 85         | 70   | 91         | 58   | 92           | 71   | 95       | 75   | 86      | 72   |
| 25... | 95       | 72   | 92       | 66   | 97             | 80   | 85             | 61   | 90          | 74   | 87         | 79   | 95            | 77   | 95       | 74   | 98      | 74   | 94         | 75   | 93         | 61   | 88           | 70   | 94       | 73   | 93      | 73   |
| 26... | 94       | 72   | 89       | 69   | 100            | 80   | 87             | 60   | 94          | 74   | 88         | 81   | 94            | 75   | 97       | 75   | 99      | 70   | 94         | 73   | 91         | 63   | 94           | 71   | 96       | 74   | 95      | 74   |
| 27... | 94       | 72   | 90       | 68   | 92             | 80   | 89             | 60   | 94          | 76   | 85         | 80   | 90            | 77   | 90       | 75   | 98      | 73   | 95         | 72   | 91         | 59   | 87           | 73   | 96       | 69   | 92      | 74   |
| 28... | 92       | 70   | 80       | 66   | 83             | 75   | 87             | 67   | 95          | 77   | 86         | 80   | 95            | 76   | 97       | 76   | 101     | 73   | 96         | 74   | 99         | 62   | 87           | 75   | 98       | 70   | 94      | 72   |
| 29... | 91       | 72   | 82       | 67   | 94             | 75   | 85             | 64   | 93          | 77   | 94         | 79   | 96            | 73   | 103      | 73   | 101     | 72   | 98         | 81   | 61         | 94   | 72           | 88   | 68       | 97   | 72      |      |
| 30... | 98       | 68   | 84       | 65   | 96             | 76   | 91             | 62   | 98          | 74   | 88         | 81   | 97            | 74   | 99       | 75   | 100     | 74   | 98         | 74   | 91         | 60   | 99           | 74   | 92       | 68   | 97      | 74   |
| 31... | 97       | 70   | 90       | 62   | 99             | 76   | 92             | 59   | 97          | 75   | 91         | 81   | 96            | 72   | 99       | 74   | 94      | 74   | 93         | 63   | 93         | 72   | 93           | 73   | 94       | 73   | 94      | 73   |
| Mns   | 97.5     | 73.3 | 90.6     | 69.1 | 101.1          | 78.4 | .....          | 95.7 | 75.4        | 88.2 | 78.5       | 95.3 | 74.1          | 97.6 | 74.3     | 98.1 | 72.6    | 94.7 | 74.3       | 91.1 | 64.5       | 95.5 | 73.4         | 96.4 | 72.5     | 95.8 | 73.0    |      |